TECHNICAL REVIEW DOCUMENT
FOR
OPERATING PERMIT 95OPBA029
Modification #1

to be issued to:

Colorado Interstate Gas (CIG) Company
Flank Compressor Station
Baca County
Source ID 0090001

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October 19, 1999 & January 20, 2000
Revised May, June and August 2000 by Jacqueline Joyce

1. Purpose

This document will establish the basis for decisions made regarding the significant modification to operating permit 95OPBA029. It is designed for reference during review of the proposed permit by the source and other interested parties. Information in this report is from the requests for modifications to the operating permit received on May 21 and July 21 1999 and January 18, 2000 and comments on the draft revised permit received April 25, 2000 and July 28, 2000. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

On April 16, 1998 the Colorado Air Quality Control Commission directed the Division to implement new procedures regarding the use of short term emission and production/throughput limits on Construction permits. These procedures are being directly implemented in all operating permits that had not started their Public Comment period as of April 16, 1998 or if specifically requested by the source. All short term emission and production/throughput limits that appeared in the construction permits associated with this facility that are not required by a specific State or Federal standard or by the above referenced Division procedures have been deleted and all annual emission and production/throughput limits converted to a rolling 12 month total. Note that, if applicable, appropriate modeling to demonstrate compliance with the National Ambient Air Quality Standards was conducted as part of the Construction Permit processing procedures. If required by this permit, portable monitoring results and/or EPA reference test method results will be multiplied by 8760 hours for comparison to annual emission limits unless there is a specific condition in the permit restricting hours of operation.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction

Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

2. Source Description

This source is classified as a natural gas transmission facility defined under Standard Industrial Classification 4922. Natural gas is injected into the Flank Storage Field in the summer and is withdrawn during the winter season. After withdrawal, the gas is dehydrated by triethylene glycol dehydrators on site and then pumped into the main line for market using natural gas fueled internal combustion engine driven compressors. The facility is located approximately 16 miles south of Stonington in Baca County, in an area designated as attainment for all criteria pollutants. The facility is located within 50 miles of Oklahoma and Kansas. There are no Federal Class I areas within 100 kilometers of the facility.

This source is considered to be a major stationary source in an attainment area (Potential to Emit > 250 tons per year) for purposes of Prevention of Significant Deterioration (PSD) regulations. Modifications up to this point in time have not triggered significance levels which would bring about PSD Review. Future modifications to this facility which are in excess of significance levels as defined in Colorado Regulation No. 3, Part A, Section I.B.58 will result in the application of the PSD review requirements. Facility wide emissions are as follows:

Potential To Emit (TPY)			
Pollutant	Current (tpy)	Proposed Modification (tpy)	Net Change (TPY)
NOx	262.7	Same	0.0
CO	311	Same	0.0
VOC	136.5	164.5	28.0

Potential emissions from the 10/01/98 operating permit were based upon Colorado Construction Permit limitations. Potential emissions for this modification are based information submitted May 27 and July 21, 1999 and January 18, 2000. Emissions of SO_2, PM, and PM_{10} are negligible from the equipment at this facility and are not changed by this modification.

3. Modifications

The Division used this opportunity to include changes to make the permit more consistent with recently issued permits as well as correct errors or omissions identified during inspections and/or discrepencies identified during review of this modification. In addition, changes were made to this permit based on EPA's comments on permits for similar sources.

Sections I, III, IV and Appendices

The following modifications to Sections I, III and IV and the Appendices of this permit were made in order to make it more consistent with recently issued operating permits.

Section I - General Activities and Summary: Condition 1.3 was modified to reflect EPA approved language. A new heading (numbered as 5) has been added for notification of MACT applicability. Corrections were made to equipment descriptions and model types, for S001 and S005 and indicated that S008 had a condenser and a flash tank (no emissions from flash tank as gases routed to reboiler) in the table in Condition 6.1 (formerly Condition 5).

Section III - Permit Shield: The title for Section 1 was changed from "Specific Conditions" to "Specific Non-Applicable Requirements" and a section 3 was added for subsumed (streamlined) conditions. Note that there have been no streamlined conditions.

Section IV - General Conditions: The language contained in the Common Provisions Regulation regarding upsets was included in General Condition 4. The citation in General Condition 13 (odor) was corrected.

Appendices: Added language to disclaimer at the start of the appendices per comments made by EPA. Revised Appendices B and C were added to the permit. The tables were changed to indicate that Unit S008 had a condenser.

Units E001 thru E005 - Internal Combustion Engines

The following general changes were made to the permit conditions for the internal combustion engines. Conditions 1.1, 2.1 and 3.1 were split into three distinct conditions (i.e. 1.1.1 and 1.1.2) to clarify that there are separate monitoring methods (i.e emission calculation, portable monitoring and stack testing). The permit was modified to clarify that the emission calculations are to be performed by the end of the subsequent month. The portable monitoring (Conditions 1.1.2, 2.1.2 and 3.1.2) and opacity monitoring (Conditions 1.4, 2.5 and 3.4) conditions were changed to EPA approved language. The construction permit citation was added to those conditions that came directly from the construction permit and the phrase "as modified under the provisions of Section I, Condition 1.3" was added after the

citation as necessary to reflect modifications made to the construction permit through operating permit processing.

Units E002, E003, E004 - Superior 4-Cycle Standard Rich Burn Internal Combustion Engine, Model 16G825, S/N: 278739, 278729, and 295039, 7844 Btu/hp-hr, 1475 hp, Natural Gas Fired.

In a memo received July 21, 1999, CIG requested that the specific hours of operation limitation for these engines be listed in the permit. The hours of operation for these engines was added to the permit as Condition 2.4. In addition, Condition 2.1.1 of the permit was modified to clarify that the hourly NO_X emission limitation was for each engine and to add monitoring (i.e. divide monthly emissions by number of hours operated). In addition, since the hourly NO_X emission limitation originated from the EPA PSD permit, the EPA PSD permit was added to the citation in Condition 2.1.1.

D001 - D004 Triethylene Glycol Dehydrators

The following general changes were made to the permit conditions for the dehydrators. The construction permit citation was added to those conditions that came directly from the construction permit and the phrase “as modified under the provisions of Section I, Condition 1.3" was added after the citation as necessary to reflect modifications made to the construction permit through operating permit processing. The parameter table was modified to clarify that the listed parameter is part of the comparison criteria (i.e. rather than “below”, “at or below” is indicated). The first sentence in Conditions 4.1.2, 5.1.2 and 6.1.2 (BTEX analysis) contained the following phrase “until consistent results have been demonstrated”. This language is not clear, therefore the Division removed this language and inserted language indicating that the frequency of BTEX analysis would decrease provided the analyses showed that the BTEX concentrations were within the acceptance criteria. The Division changed the requirement (Conditions 4.1.3, 5.1.3 and 6.1.3) to perform GlyCalc runs by “the 10th of the subsequent month” to “by the end of the subsequent month”, in order to be more consistent with other issued permits. In addition, the Division changed the requirements for determining monthly emissions for those months that did not require a GlyCalc run to specify that the source multiply the worse case daily emission rate by the number of days the unit operated in the month rather than by the number of days in the month.

In their comments on the draft modification received April 25, 2000, CIG requested that the requirement to monitor and record the glycol recirculation rate twice weekly be removed. CIG indicated that these recirculation pumps were positive displacement pumps that were capable of providing a fixed volume of glycol through the unit and that the recirculation rate could not exceed the design rate of the pump. In the Division’s original negotiations with CIG and other companies on the

periodic monitoring requirements for dehydrators, it was determined that the recirculation pumps could be one of two types, electric or gas driven. The pump rate for the gas driven pumps could be increased simply by increasing gas flow to the pump. While the electric driven pumps would have to be disassembled to increase the pump rate. The Division could only determine that one glycol dehydrator (units S008) was equipped with an electric pump. Therefore, the Division removed the requirement to monitor the glycol recirculation rate from the permit for Unit S008 only. The maximum glycol rate was included as an assumed parameter under Condition 5.1.4.

In addition, CIG requested in their comments on the draft modification received April 25, 2000 that the requirement to run GlyCalc if a parameter exceeds the criteria range be waived if the unit operates for less than ten (10) days. The Division agrees that if a unit runs less than 10 days, the assumption that the unit complies with the emission limits (based on a worse case analysis) are still valid even if some parameters exceed the acceptance criteria, provided the gas throughput and hours of operation limitations are met. The permit has been modified to reflect this request.

Unit D003 - Olman Heath Triethylene Glycol Dehydrator, S/N: 296110, 135 MMscf/day capacity. (Facility ID S008)

The original Operating Permit listed the glycol recirculation rate for this unit at 11.3 gallons per minute (gpm). As part of this modification CIG made a correction to this flow rate, increasing it to 35 gpm.

When this unit was installed in 1989, CIG accepted an emissions limit on Volatile Organic Compounds of 15.5 tpy; this was accomplished by limiting the allowable operating hours of the unit. The emission limit was taken to allow the company to add the new dehydrator as a PSD synthetic minor modification at an existing PSD facility. The limitations taken were based on the recirculation rate being 11.3 gpm.

The dehydrator emissions are estimated using the Gas Research Institute's GLYCalc Model and the recirculation rate is a very important parameter in running the model. Small changes in the recirculation rate can have a large impact in predicted emissions. When the corrected rate of 35 gpm is used in the model along with the current operating hours restriction of 3600 hours, it appears that the installation of unit S008 would have been a major modification when it was installed in 1989 and should have undergone a PSD review.

The Division has reviewed the current modification request and the history of the unit and believes that a PSD review is not necessary. Since the unit is already equipped with a control device (condenser) and since CIG has submitted historical data showing that the unit has never actually operated with emissions in excess of

the significance level, the Division has decided to allow CIG to restrict the allowable operating hours again. The new operating hours limit will be 2800 hours per year which effectively limits the emissions from S008 to 37.9 tons per year. The hourly limit also results in a decrease in the allowable natural gas throughput to 15,750 MMscf per year.

As specified in the above paragraph, this unit is equipped with a condenser. The current operating permit does not indicate that this unit has a condenser and no periodic monitoring for condenser temperature is provided. Therefore, a "worse case" condenser temperature of 100 ° F will be added to the permit and the comparison criteria will be at or below this temperature. The frequency of monitoring the condenser temperature will be twice per week.

In addition to the condenser, this unit has a flash tank. Emissions from the flash tank are predicted by the "worse case" GLYCalc run at approximately 8 tons/yr. The off gas emissions from the flash tank were not included in the emission limit for this unit. Had the flash tank emissions been included in the permit limits, VOC emissions would have exceeded 40 tons/yr and PSD review would have been required. CIG indicated in a telephone conversation that the flash tank off gas is not emitted but is routed to the reboiler and used as fuel.

Unit D004 - Olman Heath Triethylene Glycol Dehydrator, S/N: 30576, 9 MMscf/day capacity. (Facility ID S009)

During a recent audit of the Flank compressor Station, CIG discovered that this entire unit had been replaced with a new unit in September of 1998. CIG has submitted a revision to correct this oversight and has requested indemnity for the modification under Colorado's audit privilege law (C.R.S. § 25-1-114.5, known as House Bill 139).

The new unit resulted in a slight increase in emissions and CIG has submitted revised APENs and GLYCalc runs to document the emissions from the unit. Natural gas throughput has increased to 18 MMscf per day (6,570 MMscf per year) and the recirculation rate is now 1.6 gpm. The new Volatile Organic Compound limit is 22.3 tpy and the unit will be allowed to operate 8760 hours per year. Since this unit is permitted to run at 8760 hours per year, the requirement to record hours of operation has been removed. The Division has however, included a requirement to record the number of days in a month that the unit is operated. The days in a month that the unit is operated is used to calculate emissions for those months in which a GlyCalc run is required.

The heater for this unit is rated at 1.5 MMBTU/hr and falls under the insignificant activity category of Regulation No. 3, Part C, Section II.E.3.k. Therefore, no specific requirements are included in the Operating Permit for the heater.

Fugitive VOC Emissions

The Division replaced the emission factors in the permit with updated emission factors. The updated emission factors are less conservative than the emission factors currently in the permit, therefore CIG should not have problems complying with the emission limitations using these factors. The construction permit citation was added to those conditions that came directly from the construction permit and the phrase “as modified under the provisions of Section I, Condition 1.3" was added after the citation as necessary to reflect modifications made to the construction permit through operating permit processing. Condition 7.1 was corrected to say that the gas analysis to be used is the most recent as required by Conditions 4.1, 5.1 and 6.1 (Condition 7.1 was also included in the originally issued operating permit).

4. Modeling

No modeling was required for this modification since the only increase in emissions is Volatile Organic Compounds. The facility is believed to be in compliance with all applicable ambient standards.